

METHOD AND APPARATUS FOR ENDPOINTING A  
CHEMICAL-MECHANICAL PLANARIZATION PROCESS

ABSTRACT OF THE DISCLOSURE

A method and apparatus for endpointing a planarization process of a microelectronic substrate. In one embodiment, the apparatus may include a species analyzer that receives a slurry resulting from the planarization process and analyzes the slurry to determine the presence of an endpointing material implanted beneath the surface of the microelectronic substrate. The species analyzer may include a mass spectrometer or a spectrum analyzer. In another embodiment, the apparatus may include a radiation source that directs impinging radiation toward the microelectronic substrate, exciting atoms of the substrate, which in turn produce an emitted radiation. A radiation detector is positioned proximate to the substrate to receive the emitted radiation and determine the endpoint by determining the intensity of the radiation emitted by the endpointing material. The endpointing material may be selected to be easily detected by the species detector or the radiation detector, and may further be selected to be easily distinguishable from a matrix material that comprises the bulk of the microelectronic substrate.